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PRE-DESIGN

DESIGN INFORMATION BULLETIN

NO.: 18.009

CONVAIR REPORT NO. ZM-22-005

PAGE: 1 of 2

MODEL 22 AIRPLANE

PITCH TRIM RATES

DATE: 1-10-58

Reference: (a) Model 22 Control Systems Design
Information Requirements DC-22-109

(b) Design and Analysis of the Horizontal
Stabilizer Trim Subsystem CONTR-22-144

The following action shall be taken to maintain a realistic weight-function relationship in the Horizontal Stabilizer Trim Subsystem:

- (1) The referenced documents shall be revised to incorporate the information contained in Table I.
- (2) The affected Design Groups shall modify the Pilots Handbook, checkout procedures and operational data to reflect the minimum available pitch trim rates per Table I, and shall provide the pilot with a preflight check procedure, such as maximum full trim time vs. temperature.

TABLE I

Percent of Maximum Available No Load Pitch Trim Rate at Various Temperatures.

<u>OPERATING CONDITIONS</u>	<u>TEMP. EXTREMES</u>	<u>BAGGAGE COMPT. TEMP. (Deg.F.)</u>	<u>TAIL SECTION TEMP. (Deg.F.)</u>	<u>*MIN PITCH TRIM RATE AVAILABLE (% MAX)</u>
1. Normal, in flight	Maximum Minimum	80° 30°	140° -50°	95% 70%
2. Normal Ground and Take-Off	Maximum Minimum	100° 0°	140° -40°	95% 35%
3. No Cabin Heat in flight	Maximum Minimum	140° -50°	140° -50°	100% 5%
4. No Cabin Heat Ground and Take-Off	Maximum Minimum	140° -40°	140° -40°	100% 5%

*The trim rates given as a % of Max. rates are for stabilizer trailing edge at 14° up. At this position, the max. rate is .5°/sec. This rate decreases uniformly to a max. rate of .1°/sec at 0° stabilizer (streamline). Due to the smaller hydraulic flow at 0° stabilizer, the available trim rates will be much less affected by temperature conditions and will consequently be a much higher % of the Max. rate for the given stabilizer position.

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